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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/562,619	BOER ET AL.	
	Examiner	Art Unit	
	CANDAL ELPENORD	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *October 28, 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) *5,18,25 and 29* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 6-17, 19-24, 26-28, 30-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 22-24, 26-28, 30-33 have been considered but are moot in view of the new ground(s) of rejection.

2. The applicant's arguments concerning the anticipatory rejections of Claims 1-4, 6, 8-13, 14-17, 19, 21, 38-41 are not deemed persuasive.

Regarding the claimed features: "wherein each of the subcarriers are active on only one of the N antennas at a given time", Gardner '709 contemplates using one of the transmit antennas to transmit one long training symbol using one set of subcarriers (i.e. even subcarriers) and the other transmitter may transmit another long training symbol using an odd set of subcarriers at particular time interval. Based on the reasons above, the Applicant's arguments are moot.

To summarize, the Examiner is equating transmitting long training symbol using an even set of subcarriers as equivalent to the claimed features "wherein each of the subcarriers are active on only one of the N antennas at a given time".

Regarding claims 22-28, the Applicant alleged the diagonal loading feature of Kadous '730 does not allow for transmitted of an indication of a duration to defer until a subsequent transmission".

In response, the Examiner respectfully disagrees because "diagonal loading" was not defined with functionality in the claim. Thus, that claimed feature is broadly interpreted by the Examiner. Further, Gardner '709 was cited teaching "deferring for

the indicated duration in the signal field. The signal field functionality was not defined in the claim, and it is thus subject to broad interpretation.

Regarding the Applicant argument with respect to the "low order receiver", the low order receiver was not defined in the respective claims, and it is thus subject to broad interpretation.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1-4, 6, 8-13, 14-17, 19, 21, 38-41** are rejected under 35 U.S.C. 102(e) as being anticipated by Gardner et al (US 2005/0233709).

Regarding claims 1, **14**, Gardner '709 a method (noted: method for transmitting where two or more transmitting antennas may be used, paragraph 0022, 0072, 0077, fig. 3 to fig. 4) for transmitting one or more training symbols (Noted: transmission of long training symbol as referenced by fig. 4, L2 , L3, and L4, paragraphs 0034-0038) in a multiple antenna communication system (fig. 3, MIMO Antennas 102, 104, fig. 8, see Transmitter 0, and Transmitter 1,paragraphs 0056, 0022), said method comprising the step of transmitting from a transmitter having N antennas (noted: method for transmitting where two or more transmitting antennas may be used, paragraph 0022,

0072, 0077, fig. 3 to fig. 4, see fig. 8, Transmitter 0, Transmitter 1) at least one training symbol using at least one antenna, such that said at least one training symbol can be interpreted by a receiver having M antennas (fig. 3, Receiving Legacy Antenna, paragraphs 0022, 0025, noted: receiver detecting the received long training symbols, paragraph 0034, “the Signal filed provides the receiver with information about the length of the packet and how long to defer”, paragraph 0055, fig. 1, fig. 4, and fig. 8), where M is less than N (noted: more than one transmit antenna or single receive antenna, paragraph 0022, lines 7-14) and wherein said at least one training symbol comprises a plurality of subcarriers (see, “L4 long training symbol containing plurality of subcarriers", paragraph 0052, lines 6-12) and wherein each of said subcarriers (see, “L4 long training symbol containing plurality of subcarriers", paragraph 0052, lines 6-12) are active on only one of said N antennas at a given time (see, the receiver operates on only one of the 20 MHz channel to decode part of the packet, paragraph 0054, lines 4-9).

Regarding claims 2, **15**, Gardner ‘709 the method of claim 1, wherein said receiver is a SISO receive (see, SISO legacy device, paragraph 0028, fig. 3, Receiving Legacy Antenna, paragraphs 0022, 0025, noted: receiver detecting the received long training symbols, paragraph 0034, “the Signal filed provides the receiver with information about the length of the packet and how long to defer”, paragraph 0055, fig. 1, fig. 4, and fig. 8).

Regarding claims 3, **16**, Gardner '709 the method, wherein said at least one training symbol is an 802. 11 a/g training symbol (noted: transmitting of a preamble using legacy device as referenced by IEEE 802.111 and IEEE 802.11g, paragraphs 0027-0028, 0062).

Regarding claims 4, **17**, Gardner '709 the method, wherein said at least one training symbol comprises at least one long training symbol (Noted: transmission of long training symbol as referenced by fig. 4, L2 , L3, and L4, paragraphs 0034-0038) and at least one SIGNAL field (Noted: Signal according to IEEE 802.11a, paragraph 0078, 0005, fig. 1, Signal Filed, paragraph 0059).

Regarding claims 6, **19**, Gardner '709 the method, wherein said SIGNAL field (Noted: Signal according to IEEE 802.11a, paragraph 0078, 0005, fig. 1, Signal Filed, paragraph 0059) indicates a duration that a receiver should deter until a subsequent transmission (fig. 3, Receiving Legacy Antenna, paragraphs 0022, lines 6-14, 0025, noted: receiver detecting the received long training symbols, paragraph 0034, "the Signal filed provides the receiver with information about the length of the packet and how long to defer", paragraph 0055, fig. 1, fig. 4, and fig. 8).

Regarding claim 8, Gardner '709 the method, whereby a lower order receiver can interpret said transmitted duration (fig. 3, Receiving Legacy Antenna, paragraphs

0022, 0025, noted: receiver detecting the received long training symbols, paragraph 0034, “the Signal filed provides the receiver with information about the length of the packet and how long to defer”, paragraph 0055, fig. 1, fig. 4, and fig. 8).

Regarding claim 9, Gardner ‘709 the method, wherein said duration is represented as a duration of said transmission (see, “duration of the packet”, paragraph 0059, lines 1-6).

Regarding claim 10, Gardner ‘709 the method, wherein said duration is represented as a length of said transmission (see, “the Signal field provides the receiver with information about the length of the packet and thus how long to defer", paragraph 0054, lines 9-12).

Regarding claims 11, **21**, Gardner ‘709 the method, wherein said SIGNAL field (Noted: Signal according to IEEE 802.11a, paragraph 0078, 0005, fig. 1, Signal Filed, paragraph 0059, fig. 8) indicates a number (see, signaling information indicating channel number, paragraph 0058, lines 15-17) of said antennas in said multiple antenna communication system (fig. 3, MIMO Antennas 102, 104, fig. 8, see Transmitter 0, and Transmitter 1,paragraphs 0056, 0022)

Regarding claim 12, Gardner ‘709 the method, wherein said number of said antennas allows said multiple antenna communication system to be scalable (noted:

more than one transmit antenna or single receive antenna, paragraph 0022, lines 7-14).

Regarding claim 13, Gardner '709 the method of claim 11, wherein said number of said antennas allows a receiver to correlate channel coefficients with corresponding transmit antennas (see, at the receiver side, channel estimates for each transmitter where an impulse response is generated, paragraph 0071).

Regarding claim 38, Gardner '709 discloses a method for transmitting data (noted: transmission of multiple data streams using IEEE 802.11 and higher data devices, paragraph 009-0010) in a multiple antenna noted: method for transmitting where two or more transmitting antennas may be used, paragraph 0022, 0072, 0077, fig. 3 to fig. 4, see fig. 8, Transmitter 0, Transmitter 1) communication system having N transmit antennas (fig. 3, MIMO Antennas 102, 104, fig. 8, see Transmitter 0, and Transmitter 1,paragraphs 0056, 0022), said method comprising the step of transmitting a legacy preamble (noted: transmission of preamble using multiple antennas, paragraph 0021-0022) having at least one long training symbol (fig. 4, Long Training Symbol L2, paragraph 0035) and at least one additional long training symbol (fig. 4, Long Training Symbol L3, paragraph 0035) on each of said N transmit antennas (fig. 3, MIMO Antennas 102, 104, fig. 8, see Transmitter 0, and Transmitter 1,paragraphs 0056, 0022), such that said training symbols (Noted: transmission of long training symbols as referenced by fig. 4, L2 , L3, and L4, paragraphs 0034-0038) can be interpreted by a

receiver having M antennas (fig. 3, Receiving Legacy Antenna, paragraphs 0022, lines 6-14, 0025, noted: receiver detecting the received long training symbols, paragraph 0034, “the Signal filed provides the receiver with information about the length of the packet and how long to defer”, paragraph 0055, fig. 1, fig. 4, and fig. 8), where M is less than N (noted: more than one transmit antenna or single receive antenna, paragraph 0022, lines 7-14) and wherein said at least one training symbol comprises a plurality of N subcarriers (see, “L4 long training symbol containing plurality of subcarriers", paragraph 0052, lines 6-12) and wherein each of said subcarriers are active on only one of said N antennas at a given time (see, the receiver operates on only one of the 20 MHz channel to decode part of the packet, paragraph 0054, lines 4-9).

Regarding claim 39, Gardner ‘709 discloses the method, wherein said legacy preamble futher comprises at least one short training symbol (fig. 1, and fig. 8, Short Training Symbol, paragraphs 0005, 0034, 0056).

Regarding claim 40, Gardner ‘709 discloses the method, wherein said legacy preamble further comprises at least one SIGNAL field (Noted: Signal according to IEEE 802.11a, paragraph 0078, 0005, fig. 1, Signal Field, paragraph 0059)..

Regarding claim 41, Gardner ‘709 discloses the method, wherein said legacy preamble is an 802.11 a/g preamble (noted: transmitting of a preamble using legacy device as referenced by IEEE 802.111 and IEEE 802.11g, paragraphs 0027-0028, 0062).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. **Claims 7, 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner et al (US 2005/0233709 A1) in view of Kadous et al (US 2004/0121730 A1).

Regarding claims 7, **20**, Gardner '709 discloses wherein said at least one training symbol comprises said a plurality of subcarriers as discussed in above paragraph.

However, Kadous '730 from the same field of endeavor discloses the above claimed features: and wherein said transmitting (fig. 3A, transmission of symbol streams diagonally from the transmitting antennas, paragraph 0076) step further comprises the step of diagonally loading said subcarriers (see, transmission of symbol streams diagonally, paragraph 0076) across said N antennas (fig. 3, Transmit Antennas 1-4).

In view of the above, having the method for transmitting preamble comprises of plurality of symbols in order to provide co-existence between 802.11 devices and higher data rate MIMO devices of Gardner '709, the transmission scheme for multicarrier MIMO systems of Kadous, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Gardner '709 by using features as taught by Kadous '730 in order to provide transmit diversity for each transmitted symbol stream as suggested in paragraph 0091, 0097.

Regarding claim 20, please see the Examiner comment with respect to claim 7 as discussed above.

9. **Claims 22-24, 26-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner et al (US 2005/0233709) in view of Kadous et al (US 2004/0121730 A1).

Regarding claims 22, **26**, Gardner '709 discloses a method for receiving data on at least one receive antenna (fig. 3, Receive Antenna 104) transmitted by a transmitter

(fig. 8, Transmitter 0) having a plurality of transmit antennas (fig. 3, MIMO Antennas 102, 104, fig. 8, see Transmitter 0, and Transmitter 1,paragraphs 0056, 0022) in a multiple antenna communication system ("MIMO transmitter comprising of two or more antennas", paragraph 0070, 0072, fig. 3, to fig. 4, fig. 8),, said method comprising the step of receiving an indication of a duration to defer until a subsequent transmission (noted: legacy receiver defers of incoming packet signals for a time", paragraph 0025, "the Signal filed provides the receiver with information about the length of the packet and how long to defer", paragraph 0055, 0059), said indication transmitted such that said indication can be interpreted by a lower order receiver (noted: the receiver decoding the signal filed which provides it with information about how long to defer, paragraph 0055, 0078, additional, the received antenna can be scalable as discussed in paragraph 0022, lines 7-14), and deferring for said indicated duration (see, "the Signal field provides the receiver with information about the length of the packet and thus how long to defer", paragraph 0054, lines 9-12).

Regarding claims 23, **27**, Gardner '709 discloses the method , wherein said method is performed by a SISO receiver (noted: the receiver decoding the long training symbols, paragraph 0077, 0071, "legacy SISO", paragraphs 0025-0029).

Regarding claims 24, **28**, Gardner '709 the method, wherein said indication is transmitted in said a SIGNAL field that complies with the 802.11 a/g standards (Noted: signal field with a four microseconds duration, paragraph 0005, "the Signal filed provides the receiver with information about the length of the packet and how long to

defer", paragraph 0055) that complies with the 802.11 a/g standards (noted: legacy wireless device that is compatible with IEEE 802.11a and 802.11g, paragraphs 0027).

Gardner '709 discloses all the claimed limitation with the exception of being silent with respect to claimed features: diagonally transmitting across the plurality of antennas.

Regarding claim 22, diagonally loading a signal field across the plurality of antennas, and deferring for indicated duration.

Regarding claim 26, diagonally loading a signal field across the plurality of antennas, and means for deferring for indicated duration.

However, Kadous '730 from the same field of endeavor discloses the above claimed features:

Regarding claim 22, diagonally loading a signal field across the plurality of antennas (fig. 3A, transmission of symbol streams diagonally from the transmitting antennas, paragraph 0076, see diagonal loading of subcarriers on each set of antenna, paragraphs 0013, 0053-0054, 0059, noted: the training symbols/symbol streams are signal elements).

Regarding claim 26, diagonally loading a signal field across the plurality of antennas (fig. 3A, transmission of symbol streams diagonally from the transmitting antennas, paragraph 0076, see diagonal loading of subcarriers on each set of antenna, paragraphs 0013, 0053-0054, 0059, noted: the training symbols/symbol streams are signal elements).

In view of the above, having the method for transmitting preamble comprises of plurality of symbols in order to provide co-existence between 802.11 devices and higher

data rate MIMO devices of Gardner '709, the transmission scheme for multicarrier MIMO systems of Kadous '730, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Gardner '709 by using diagonal transmission features as taught by Kadous '730 in order to transmit the signal field associated with the training symbols diagonally so that transmission diversity can be provided for each transmitted symbol stream as suggested in paragraph 0091, 0097.

10. **Claims 30, 32-34**, **36** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner et al (US 2005/0233709 A1) in view of Banister et al (US 7,248,638 B1).

Regarding claims 30, **34** Gardner '709 discloses a method for communicating in a multiple antenna communication system (fig. 3, MIMO Antennas 102, 104, fig. 8, see Transmitter 0, and Transmitter 1,paragraphs 0056, 0022), said method comprising the step of transmitting one or more symbols (Noted: transmission of long training symbols as referenced by fig. 4, L2 , L3, and L4, paragraphs 0034-0038) from a transmitter having N transmit branches (fig. 3, fig. 8, Transmitter 0, Transmitter 1).

Regarding claims 32, **36**, Garner '709 discloses the method of claim 30, wherein said one or mote parameters includes a modulation scheme (see, signaling information such as the transmitter multi-band mode, data rate , coding rate, paragraph 0058, lines 15-17) for said at least one of said N transmit branches (fig. 3, fig. 8, Transmitting Antennas 102, 104, paragraphs 022-0023, 0030-0031, 0056, "MIMO transmitter comprising of two or more antennas", paragraph 0070, 0072, Transmitter 0, Transmitter 1).

Regarding claims 33, **37**, the method of' claim 30, wherein said one or mote parameters includes an encoding rate (see, “coding rate”, paragraph 0058, lines 15-18) for said at least one of said N transmit branches (fig. 3, fig. 8, Transmitting Antennas 102, 104, paragraphs 022-0023, 0030-0031, 0056, “MIMO transmitter comprising of two or more antennas”, paragraph 0070, 0072, Transmitter 0, Transmitter 1).

Gardner ‘709 discloses all the claimed limitations as set forth above with the exception of being silent with respect to claimed features:

Regarding claim 30, obtaining feedback at the transmitter from at least one receiver indicating a performance for at least one of the N transmit branches; and adapting one or more parameters of the at least one of the N transmit branches.

Regarding claim 34, obtaining feedback at the transmitter from at least one receiver indicating a performance for at least one of the N transmit branches; and means for adapting one or more parameters of the at least one of the N transmit branches.

However, Banister ‘638 from the same field of endeavor discloses then above claimed features:

Regarding claim 30, obtaining feedback at the transmitter (see, feedback signal transmitted to transmitter from the receiving side, col. 4, lines 25-34) from at least one receiver (fig. 1, Receiver) indicating a performance for at least one of the N transmit branches (noted: channel gain estimated, col. 2, lines 8-21, see plurality of transmit antennas, col. 2, lines 8-21, fig. 1, transmitting set of antennas); and adapting one or

more parameters of the at least one of the N transmit branches (noted: using the feedback signal to modify the next transmission of OFDM signals, col. 4, lines 25-34).

Regarding claim 34, obtaining feedback at the transmitter (see, feedback signal transmitted to transmitter from the receiving side, col. 4, lines 25-34) from at least one receiver (fig. 1, Receiver) indicating a performance for at least one of the N transmit branches (noted: channel gain estimated, col. 2, lines 8-21, see plurality of transmit antennas, col. 2, lines 8-21, fig. 1, transmitting set of antennas); and means for adapting one or more parameters of the at least one of the N transmit branches (noted: using the feedback signal to modify the next transmission of OFDM signals, col. 4, lines 25-34).

In view of the above, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching features of Gardner '709 by using the teaching features as taught by Banister '638 in order to provide performance measurement of one of the ODFM MIMO antennas as suggested in col. 3, lines 65-67.

11. **Claims 31, 35** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner et al (US 2005/0233709 A1) in view of Banister et al (US 7,248,638 B1) as applied to claims 30, 34 above, and further in view of Crawford et al (US 2003/0002471 A1).

Gardner '709 and Banister '638 disclose all the claimed limitations with the exception of being silent with respect to claimed features:

Regarding claims 31, 35, wherein said one or mote parameters includes a number of active transmit branches.

Crawford '471 form the same field of endeavor discloses the above claimed features: **Regarding claims 31,35**, wherein said one or mote parameters includes a number of active transmit branches (see, antenna branch measures during the reception of signals, paragraph 0052, see, "selecting two best branches", paragraph 0051, 0064).

In view of the above, having the method for transmitting preamble comprises of plurality of symbols in order to provide co-existence between 802.11 devices and higher data rate MIMO devices of Gardner '709, the feedback regarding the transmit antenna of Banister '638, the method for estimating and diversity selection based on antenna probing of Crawford '471, it would have been obvious to modify the features of Gardner '709 with Banister '638 by using features as taught by Crawford '471 in order to provide diversity selection of antenna branches as suggested in paragraph 0018.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Li et al (US 7,110,350 B2) and Marzetta et al (US 2004/0192216 A1).

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CANDAL ELPENORD whose telephone number is (571)270-3123. The examiner can normally be reached on Monday through Friday 7:30AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Bin Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Candal Elpenord/

Examiner, Art Unit 2416

/Kwang B. Yao/
Supervisory Patent Examiner, Art Unit 2416